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10/564,129	01/11/2006	Toshimi Nakamura	Q91344	8865

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EXAMINER
SHABMAN, MARK A

ART UNIT	PAPER NUMBER
2856	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/564,129	NAKAMURA ET AL.	
	Examiner	Art Unit	
	MARK SHABMAN	2856	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 January 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *16-39* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *25-27* is/are allowed.

6)☒ Claim(s) *16-22,24,28-30 and 32-39* is/are rejected.

7)☒ Claim(s) *23 and 31* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *16 January 2008* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

Claim 24 is rejected under 35 U.S.C. 102(a) as being anticipated by the applicant cited prior art.

Regarding **claim 24**, the cited prior art discloses a "liquid retaining portion including a space configured to retain liquid flown into the leak detector" as seen in figure 17 between the areas of measuring unit 111 and liquid level LS2. This liquid is part of the liquid of the tank. A "flow path portion" is located at the bottom of the detector 110 allowing the fluid from the tank to flow into the space of detector 110 through measurement unit 111 as described in paragraph [0003], thus reading on "a flow path portion through which the space communicates with an interior of the tank and through liquid flows in and out." Paragraph [0004] describes the capability to close of ventilating path 112a to stop the flow of gas in and out of the leak detector. By closing the pathway, fluid is unable to enter or leave the "flow path portion" (i.e. if the pathway is closed, the fluid cannot enter the flow path portion as there is no way for the gas inside to escape, making room for the fluid) and thus the ability to close the pathway reads on the "flow path opening/closing unit configured to open and close at least one end of the

flow path portion to control the flow of liquid into the flow path portion." There exists a "flow-rate measuring unit" similar to the one claimed in the prior art which would measure the rate of flow of liquid flowing into and out of the flow path portion of the detector 110, reading on the flow-rate measuring unit as claimed. Paragraph [0004] describes a method for calibrating the leak detector 110. The "flow-rate measuring unit" is far enough from sensor 111 to provide for an effective vent, and yet near enough such that both the flow path portion 112a and the sensor 111 are in the container 101. The physical/dimensional meaning of "near" is not defined in the claim and therefore, the two are considered to be "near" one another as claimed. Since the reference value calculated is for liquid-flow-rate, this reads on the "calibrating unit" as claimed and it is "configured to calibrate the flow-rate measuring unit."

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 16-18, 22, 28, 29, 32, 33, 36 and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over applicant admitted prior art in view of Lagergren US patent 4,732,035 (hereinafter referred to as Lagergren) in further view of Maresca US Patent 5,950,487 (hereinafter referred to as Maresca).

Regarding **claim 16**, figure 17 of the present application shows a "conventional leak detector" in a tank for detection of leaks within the tank itself. Item 110 is described as a liquid leak detector in paragraph [0003], thus reading on the "leak detector for detecting leakage of liquid stored in a tank" as claimed. As a tank leaks, the leak rate would be based on "fluctuation in a liquid level of the liquid". The tank shown in figure 17 can be seen to have a "top plate" and a "bottom plate" as claimed along with a perpendicular plate along the side connecting said top and bottom plates, which is interpreted as the "side plate" as claimed. The "top assembly" 112 of the leak detector is attached to the "the top plate" to cover an opening provided therein, with the rest of the device extending inside the tank towards the bottom plate, perpendicular to the surface of the liquid LS2 within. The prior art does not disclose the bottom end of the leak detector being "detachably attached to the bottom plate or the "second end supported in the through opening in such a manner that the leak detector is movable in a direction substantially perpendicular to the surface of the liquid."

Lagergren discloses a method and apparatus for storage tank leak detection having temperature compensation in which a pressure tube 24 is inserted into a tank vertically through a riser pipe 16 as seen in the figures and column 4 lines 16-20. The description in column 4 describes the tube as being supported in a temporary fashion, thus the upper end would be "movable relatively to the top plate within the riser pipe i.e. perpendicularly to the liquid surface in the tank. Lagergren further states that the bottom end of the tube is installed adjacent the base of the tank. The bottom end of the tube is not however "detachably attached to the base" as claimed. Langergren teaches

a method of mounting a temporary probe vertically within a fluid tank, wherein the bottom portion of the probe rests on the bottom of the tank.

Maresca discloses a gauge for measuring liquid levels of a float variety. Figure 1A shows a vertical scale component 12 and a weight 14 attached to the bottom in order to secure it in a vertical position. Column 15 lines 23-31 describe figure 12E disclosing an embodiment in which the weight is replaced with a magnet 298 attaching it to the base weight 296 or another magnet 300. Since the apparatus of Maresca is used to attach a vertical liquid sensing probe to the bottom of a tank in a secure fashion, it would have been obvious to one of ordinary skill in the art at the time of invention to combine the base attachment method of Maresca with the vertical pressure tube of Lagergren in order to further secure the tube in a vertical position or if the tank was located above ground and the riser pipe support was not as long. Further, it would have been obvious to one of ordinary skill in the art at the time of invention to extend the leak detection unit of the prior art to the bottom of the tank as taught by Maresca and Lagergren in case the leak forms while there is a low liquid level in the tank, thus allowing the leak detection unit to function properly.

Regarding **claim 17**, the prior art teaches a flow rate sensor that operates by liquid passing through it. In order for liquid to pass through the flow rate measurement unit 111, the "inlet/outlet portion" would be near the bottom with the sensor below the flow-rate measuring unit 111, reading on "near the bottom end through which the liquid flows in and out of the liquid detector." This further reads on "a flow rate measuring unit arranged near the liquid inlet/outlet portion" as claimed. As the flow rate measuring unit

is located above the inlet/outlet portion, it is "toward the upper end". Since it measures the flow rate of the liquid which enters the inlet/outlet below, as the water level rises or falls the amount of water passing through the measuring unit corresponds to inlet/outlet potion, thus the measuring unit measures "an amount of flow of the liquid occurring through the liquid inlet/outlet portion". As can be seen in figure 17, the liquid level LS2 within the leak detector 110 corresponds to the liquid level of the tank itself LS1. The LS2 is described in paragraph [0003] as inside the leak detector. This liquid between the measuring unit 111 and the "upper end", is the "liquid retaining portion" as claimed. The liquid within this space has entered "through the liquid inlet/outlet portion."

Regarding **claim 18**, Maresca discloses an embodiment in which the "bottom end is detachably attached to the bottom plate with a magnet."

Regarding **claim 19**, it was known in the art at the time of invention to use elastic supports such as rubber gaskets and washers to separate individual metal pieces in the manner claimed in order to form air-tight seals between the pieces and help prevent the two from rusting together, preventing separation later on if needed.

Regarding **claim 20**, Lagergren describes how temperature variation can cause tank deformation ant tank geometry to change. The tube 24 of Lagergren is a "protective member" which would be similar to the protective member seen in the admitted prior art. It would have been obvious to one of ordinary skill in the art at the time of invention to form the "protective member" from the same or similar metal as the tank to ensure that any temperature variations affecting the tank would likewise equally affect the member, thus yielding accurate results.

Regarding **claim 21**, Lagergren describes how temperature variation can cause tank deformation ant tank geometry to change. The tube 24 of Lagergren is a "protective member" which would be similar to the protective member seen in the admitted prior art. It would have been obvious to one of ordinary skill in the art at the time of invention to form the "protective member" from the same or similar metal as the tank to ensure that any temperature variations affecting the tank would likewise equally affect the member, thus yielding accurate results.u8

Regarding **claim 22**, figure 12E of Maresca and lines 28-31 disclose an embodiment in which an intermediate member 298 is a magnet, arranged at the bottom of the tank, thus on the bottom of the leak detector, attaching the detector to the bottom plate as claimed.

Regarding **claim 28**, the cited prior art discloses a "liquid retaining portion including a space configured to retain liquid flown into the leak detector" as seen in figure 17 between the areas of measuring unit 111 and liquid level LS2. This liquid is part of the liquid of the tank. A "flow path portion" is located at the bottom of the detector 110 allowing the fluid from the tank to flow into the space of detector 110 through measurement unit 111 as described in paragraph [0003], thus reading on "a flow path portion through which the space communicates with an interior of the tank and through liquid flows in and out." Paragraph [0004] describes the capability to close of ventilating path 112a to stop the flow of gas in and out of the leak detector. This ability to close the pathway reads on the "flow path opening/closing unit configured to open

and close at least one end of the flow path portion." There exists a "flow-rate measuring unit" 111 located at the bottom end of the detector, similar to the that claimed in the prior art which would measure the rate of flow of liquid flowing into and out of the flow path portion of the detector 110, reading on the flow-rate measuring unit as claimed. Paragraph [0004] describes a method for calibrating the leak detector 110. Since the reference value calculated is for liquid-flow-rate, this reads on the "calibrating unit" as claimed and it is "configured to calibrate the flow-rate measuring unit." The prior art does not disclose the manner of mounting the leak detector as claimed.

Lagergren discloses a method and apparatus for storage tank leak detection having temperature compensation in which a pressure tube 24 is inserted into a tank vertically through a riser pipe 16 as seen in the figures and column 4 lines 16-20. The description in column 4 describes the tube as being supported in a temporary fashion, thus the upper end would be "movable relatively to the top plate within the riser pipe i.e. perpendicularly to the liquid surface in the tank. Lagergren further states that the bottom end of the tube is installed adjacent the base of the tank. The bottom end of the tube is not however "detachably attached to the base" as claimed. Langergren teaches a method of mounting a temporary probe vertically within a fluid tank, wherein the bottom portion of the probe rests on the bottom of the tank.

Maresca discloses a gauge for measuring liquid levels of a float variety. Figure 1A shows a vertical scale component 12 and a weight 14 attached to the bottom in order to secure it in a vertical position. Column 15 lines 23-31 describe figure 12E disclosing an embodiment in which the weight is replaced with a magnet 298 attaching it

to the base weight 296 or another magnet 300. Since the apparatus of Maresca is used to attach a vertical liquid sensing probe to the bottom of a tank in a secure fashion, it would have been obvious to one of ordinary skill in the art at the time of invention to combine the base attachment method of Maresca with the vertical pressure tube of Lagergren in order to further secure the tube in a vertical position or if the tank was located above ground and the riser pipe support was not as long. Further, it would have been obvious to one of ordinary skill in the art at the time of invention to extend the leak detection unit of the prior art to the bottom of the tank as taught by Maresca and Lagergren in case the leak forms while there is a low liquid level in the tank, thus allowing the leak detection unit to function properly.

Regarding **claim 29**, Maresca discloses an embodiment in which the "first end is detachably attached to the bottom plate with a magnet.

Regarding **claim 30**, it was known in the art at the time of invention to use elastic supports such as rubber gaskets and washers to separate individual metal pieces in the manner claimed in order to form air-tight seals between the pieces and help prevent the two from rusting together, preventing separation later on if needed.

Regarding **claim 32**, paragraph [0004] of the cited prior art describes a method of calibration by taking a temperature reading within the leak detector while the liquid is stopped. This reads on calibrating "the flow-rate measuring unit based on a signal corresponding to temperature of liquid being inside the flow path portion without flowing."

Regarding **claim 33**, Lagergren describes how temperature variation can cause tank deformation ant tank geometry to change. The tube 24 of Lagergren is a "protective member" which would be similar to the protective member seen in the admitted prior art. It would have been obvious to one of ordinary skill in the art at the time of invention to form the "protective member" from the same or similar metal as the tank to ensure that any temperature variations affecting the tank would likewise equally affect the member, thus yielding accurate results.

Regarding **claim 34**, the rejection of claim 33 mentions use of an identical material to that of the tank as claimed.

Regarding **claim 35**, the prior art teaches the use of controlling the opening and closing path of the leak detector. It would have been obvious to one of ordinary skill in the art at the time of invention to control this opening and closing with a valve, since they are commonly used for such purposes. Further, it would have been obvious to one of ordinary skill in the art at the time of invention to use a solenoid valve as they are controlled electronically and generally used to regulate the flow of a liquid or gas and could be controlled via external means.

Regarding **claim 36**, the cited prior art describes a leak detecting system for use in a tank with the claimed features. The cited prior art further describes a method of calibrating the leak detector by use of a measured reference value and determining a leak rate. Since calibration requires adjustment of the detector, and the determination of leak rate requires calculation, a "controller" would be present or would have been

obvious to add to control this adjustment, thus reading on the "controller configured to control the leak detector" as claimed.

Lagergren discloses a method and apparatus for storage tank leak detection having temperature compensation in which a pressure tube 24 is inserted into a tank vertically through a riser pipe 16 as seen in the figures and column 4 lines 16-20. The description describes that the tube can be in place temporarily and thus it would be possible to move it vertically within the riser pipe i.e. perpendicularly to the liquid level of the tank if desired. Lagergren further states that the bottom end of the tube is installed adjacent the base of the tank. The bottom end of the tube is not however "detachably attached to the base" as claimed. Lagergren teaches an installation method for a vertical leak sensor in a tank which rests on the bottom of the tank is movable in relation to the top of the tank.

Maresca discloses a gauge for measuring liquid levels of a float variety. Figure 1A shows a vertical scale component 12 and a weight 14 attached to the bottom in order to secure it in a vertical position. Column 15 lines 23-31 describe figure 12E disclosing an embodiment in which the weight is replaced with a magnet 298 attaching it to the base weight 296 or another magnet 300. It would have been obvious to one of ordinary skill in the art at the time of invention to combine the base attachment method of Maresca with the vertical pressure tube of Lagergren in order to further secure the tube in a vertical position or if the tank was located above ground and the riser pipe support was not as long. Further, it would have been obvious to one of ordinary skill in the art at the time of invention to combine the mounting teachings of Lagergren in view

of Maresca with the admitted prior art to ensure a strong vertical support for a lowered leak detector since any change in angle from perpendicular to the liquid would cause the potential leak rate to be miscalculated as higher than it truly is.

Regarding **claim 37**, the prior art teaches a flow rate sensor that operates by liquid passing through it. In order for liquid to pass through the flow rate measurement unit 111, the "inlet/outlet portion" would be near the bottom with the sensor below the flow-rate measuring unit 111, reading on "near the bottom end through which the liquid flows in and out of the liquid detector." This further reads on "a flow rate measuring unit arranged near the liquid inlet/outlet portion" as claimed. As the flow rate measuring unit is located above the inlet/outlet portion, it is "toward the upper end". Since it measures the flow rate of the liquid which enters the inlet/outlet below, as the water level rises or falls the amount of water passing through the measuring unit corresponds to inlet/outlet potion, thus the measuring unit measures "an amount of flow of the liquid occurring through the liquid inlet/outlet portion". As can be seen in figure 17, the liquid level LS2 within the leak detector 110 corresponds to the liquid level of the tank itself LS1. The LS2 is described in paragraph [0003] as inside the leak detector. This liquid between the measuring unit 111 and the "second end", is the "liquid retaining portion" as claimed. The liquid within this space has entered "through the liquid inlet/outlet portion."

Regarding **claim 38**, the cited prior art discloses a "liquid retaining portion including a space configured to retain liquid flown into the leak detector" as seen in figure 17 between the areas of measuring unit 111 and liquid level LS2. This liquid is

part of the liquid of the tank. A "flow path portion" is located at the bottom of the detector 110 allowing the fluid from the tank to flow into the space of detector 110 through measurement unit 111 as described in paragraph [0003], thus reading on "a flow path portion through which the space communicates with an interior of the tank and through liquid flows in and out." Paragraph [0004] describes the capability to close of ventilating path 112a to stop the flow of gas in and out of the leak detector. By closing the pathway, fluid is unable to enter or leave the "flow path portion" (i.e. if the pathway is closed, the fluid cannot enter the flow path portion as there is no way for the gas inside to escape, making room for the fluid) and thus the ability to close the pathway reads on the "flow path opening/closing unit configured to open and close at least one end of the flow path portion to control the flow of liquid into the flow path portion." There exists a "flow-rate measuring unit" similar to the one claimed in the prior art which would measure the rate of flow of liquid flowing into and out of the flow path portion of the detector 110, reading on the flow-rate measuring unit as claimed. Paragraph [0004] describes a method for calibrating the leak detector 110. The "flow-rate measuring unit" is far enough from sensor 111 to provide for an effective vent, and yet near enough such that both the flow path portion 112a and the sensor 111 are in the container 101. The physical/dimensional meaning of "near" is not defined in the claim and therefore, the two are considered to be "near" one another as claimed. Since the reference value calculated is for liquid-flow-rate, this reads on the "calibrating unit" as claimed and it is "configured to calibrate the flow-rate measuring unit." Since calibration requires adjustment of the detector, and the determination of leak rate requires calculation, a

"controller" would be present or would have been obvious to add to control this adjustment, thus reading on the "controller configured to control the leak detector" as claimed.

Regarding **claim 39**, the cited prior art discloses a "liquid retaining portion including a space configured to retain liquid flown into the leak detector" as seen in figure 17 between the areas of measuring unit 111 and liquid level LS2. This liquid is part of the liquid of the tank. A "flow path portion" is located at the bottom of the detector 110 allowing the fluid from the tank to flow into the space of detector 110 through measurement unit 111 as described in paragraph [0003], thus reading on "a flow path portion through which the space communicates with an interior of the tank and through liquid flows in and out." Paragraph [0004] describes the capability to close of ventilating path 112a to stop the flow of gas in and out of the leak detector. By closing the pathway, fluid is unable to enter or leave the "flow path portion" (i.e. if the pathway is closed, the fluid cannot enter the flow path portion as there is no way for the gas inside to escape, making room for the fluid) and thus the ability to close the pathway reads on the "flow path opening/closing unit configured to open and close at least one end of the flow path portion to control the flow of liquid into the flow path portion." There exists a "flow-rate measuring unit" similar to the one claimed in the prior art which would measure the rate of flow of liquid flowing into and out of the flow path portion of the detector 110, reading on the flow-rate measuring unit as claimed. Paragraph [0004] describes a method for calibrating the leak detector 110. The "flow-rate measuring unit"

is considered to be “near” the bottom of the tank as it is located at the bottom of the leak sensor. The physical/dimensional meaning of “near” is not defined in the claim and therefore, the two are considered to be “near” one another as claimed. Since the reference value calculated is for liquid-flow-rate, this reads on the “calibrating unit” as claimed and it is “configured to calibrate the flow-rate measuring unit.” Since calibration requires adjustment of the detector, and the determination of leak rate requires calculation, a “controller” would be present or would have been obvious to add to control this adjustment, thus reading on the “controller configured to control the leak detector” as claimed. The admitted prior art does not teach the bottom end of the leak detector as being "detachably attached” to the bottom plate of the tank or the upper end of the leak detector as movable relative to the top plate.

Lagergren discloses a method and apparatus for storage tank leak detection having temperature compensation in which a pressure tube 24 is inserted into a tank vertically through a riser pipe 16 as seen in the figures and column 4 lines 16-20. The description in column 4 describes the tube as being supported in a temporary fashion, thus the upper end would be “movable relatively to the top plate within the riser pipe i.e. perpendicularly to the liquid surface in the tank. Lagergren further states that the bottom end of the tube is installed adjacent the base of the tank. The bottom end of the tube is not however “detachably attached to the base” as claimed. Langergren teaches a method of mounting a temporary probe vertically within a fluid tank, wherein the bottom portion of the probe rests on the bottom of the tank.

Maresca discloses a gauge for measuring liquid levels of a float variety. Figure 1A shows a vertical scale component 12 and a weight 14 attached to the bottom in order to secure it in a vertical position. Column 15 lines 23-31 describe figure 12E disclosing an embodiment in which the weight is replaced with a magnet 298 attaching it to the base weight 296 or another magnet 300. Since the apparatus of Maresca is used to attach a vertical liquid sensing probe to the bottom of a tank in a secure fashion, it would have been obvious to one of ordinary skill in the art at the time of invention to combine the base attachment method of Maresca with the vertical pressure tube of Lagergren in order to further secure the tube in a vertical position or if the tank was located above ground and the riser pipe support was not as long. Further, it would have been obvious to one of ordinary skill in the art at the time of invention to extend the leak detection unit of the prior art to the bottom of the tank as taught by Maresca and Lagergren in case the leak forms while there is a low liquid level in the tank, thus allowing the leak detection unit to function properly.

Allowable Subject Matter

Claims 25-27 are allowed.

Claims 23 and 31 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

Applicant's arguments with respect to claims 16-18, 22, 24, 28, 29, 32, and 36-69 have been considered but are moot in view of the new ground(s) of rejection.

In regards to claims 19, 27 and 35 which were not addressed in the original office action mailed on 17 October 2007, the claims are rejected as described in the action above. Further, claims 20, 21, 30, 33, and 34 which were previously listed as allowable but dependent on a rejected claim are now rejected as well.

Conclusion

As no prior rejection was issued for claims 19-21, 30, and 33-35, this action is made **NON-FINAL.**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MARK SHABMAN whose telephone number is (571)270-3263. The examiner can normally be reached on M-F 7:30am - 5:00pm, EST (Alternating Fridays Off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron Williams can be reached on (571) 272-2208. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/M. S./
Examiner, Art Unit 2856
/Hezron Williams/
Supervisory Patent Examiner, Art Unit 2856